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REMARKS

Claim 1 has been amended, claim 5 has been cancelled, and new claims 7-16 have been added. Accordingly, upon entry of the above amendments claims 1-4 and 6-16 will be pending and under consideration in the application.

Rejection Under 35 U.S.C. §103

Claims 1-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bayer et al. (U.S. Patent No. 5,158,990). Bayer et al. disclose a drop coating composition for unhused electrical and electronic circuits and components. The drop coating composition comprises a cationically curable epoxy resin mixture, and a fine-particle filler having a maximum grain size of 150 micrometers and a grain size distribution that is suitable for achieving an optimally tight spatial packing of the filler in the resin. According to the specification, the "filler portion of the compound comprises between approximately 30 to about 80 percent by volume of the compound." The desired tight packing "is achieved, for example, when grain size distributions for the filler are used in the following ranges: a) approximately 55 to about 95 weight percent of the particles have a diameter of approximately 1 to about 150 μm ; b) approximately 1 to about 35 weight percent of the particles have a diameter of approximately 1 to about 25 μm ; and c) approximately 0.5 to about 20 weight percent of the particles have a diameter smaller than approximately 5 μm ."

Claims 1-4 and 6 require a composite material underfilling, overmolding or encapsulating composition including a continuous thermoset matrix phase and a discontinuous liquid crystalline polymer phase dispersed throughout the thermoset matrix phase, "wherein the dispersed liquid crystalline polymer is in the form of particles having an average size of from about 0.2 microns to about 0.5 microns." It is respectfully submitted that a reference that teaches a particle size distribution in which at least 55 percent of the particles have a diameter greater than 1 micron and only about 0.5 to about 20 weight percent of the particles have a diameter smaller than approximately 5 microns, cannot teach or suggest the claimed electrical component in which the composite material underfilling, overmolding or encapsulating composition contains dispersed liquid crystalline polymer particles having an average size of from about 0.2 microns to about 0.5 microns. The importance of the Bayer et

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al. particle size distribution is repeatedly emphasized throughout the specification, including the summary, detailed description and claims. Thus, rather than teaching or suggesting the claimed invention, the Bayer et al. patent actually teaches against the claimed invention.

New Claims

Claims 7-16 have been added to claim subject matter that is neither taught nor suggested by the prior art. More specifically, claims 7-10 are directed to an electrical component in which a composite material underfilling, overmolding or encapsulating composition includes a continuous thermoset matrix phase and a discontinuous liquid crystalline polymer phase dispersed throughout the thermoset matrix phase, "wherein the dispersed liquid crystalline polymer is present in the composition material in an amount of about 10 percent by weight." Rather than teaching or suggesting use of a crystalline polymer phase in an amount of about 10 percent by weight, the Bayer et al. patent teaches that the "filler portion of the compound comprises between approximately 30 to about 80 percent by volume of the compound." Rather than suggesting a low amount as required by the claims, the Bayer et al. patent recommends a grain size and grain size distribution that "is selected such that it is suitable for achieving an optimally tight spatial packing of the filler and the resin." Instead of teaching or suggesting the claimed invention, the Bayer et al. patent teaches against utilizing a low amount (e.g., about 10 percent by weight) of a liquid crystalline polymer phase dispersed throughout the thermoset matrix phase.

New claims 11-16 have been added to encompass electrical components comprising a substrate circuit board, an electronic device mounted on the substrate circuit board, and a composite material underfilling, wherein the underfilling composite material includes a continuous thermoset matrix and a discontinuous liquid crystalline polymer phase dispersed throughout the thermoset matrix phase. As stated by the Examiner, the Bayer patent "fails to teach the electronic device mounted on the substrate circuit board in spaced relationship from the substrate circuit board," and, therefore, does not teach or suggest underfilling, i.e., filling a space between a circuit board and an electronic device with a composite material. Further, the Bayer et al. patent disclosure is limited to drop coating compositions in which the desired high filler loading would be acceptable. In contrast, the desired high filler loadings of the drop

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coating compounds of Bayer et al. would be unsuitable for underfilling on account of the extremely high viscosity associated with the high filler loading.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that the application is in condition for allowance and notice of the same is earnestly solicited.

Respectfully submitted,

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